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Conference Proceedings or Journal Articles:

a case study of publications of Canadian computer scientists

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Motivation for this research

- Liaison Librarian to the Department of Computer Science
- To have a comprehensive understanding of the scholarly communication in this field
- To provide evidence for research evaluation by comparing the scientific impact of conference papers vs journal articles in computer science
- To improve information services to students and researchers in this field
- To provide evidence for collection development decisions in computer science

Outline

- Overview

  Conference proceedings vs journal articles
- Methods
- Results
- Implications

What are conference proceedings?

- Conference proceedings are a collection of technical papers presented at a professional association meeting. *
- They are usually distributed as printed volumes and/or in electronic form either before the conference opens or after it has closed.
- In science, engineering and technology fields, these publications are usually full papers, in contrast to abbreviated papers or abstracts.

*Definition adapted from http://www.ieee.org/documents/confprocdefined.pdf

Unique Citation Pattern in Computer Science

- Conference publications are an important channel of scholarly communication, representing a large body of the literature

  A quick search in Scopus in computer science subject area identified

  - 1,750,000 conference papers (55% of total publications)
  - 1,218,000 journal articles (38% of total publications)
- Conference papers are considered as important as journal publications
- They are often published as final research

Reasons to Publish in Conference Proceedings

- Papers are usually published faster in conference proceedings than in journal articles
  - Speed of publishing is important to fast developing fields such as computer science
- Dynamic features of computer science research may be unsuitable for standard format of journal publications
- Face-to-face interactions in conference venues allow instant information exchange and feedback

Research Objectives

- What is the proportion of proceeding papers and journal articles in computer science?
- What are the publishing trends over the years?
- Are there differences between proceeding papers and journal articles in their structure?
- Are there differences between the two types of publications in their impact?

Methods

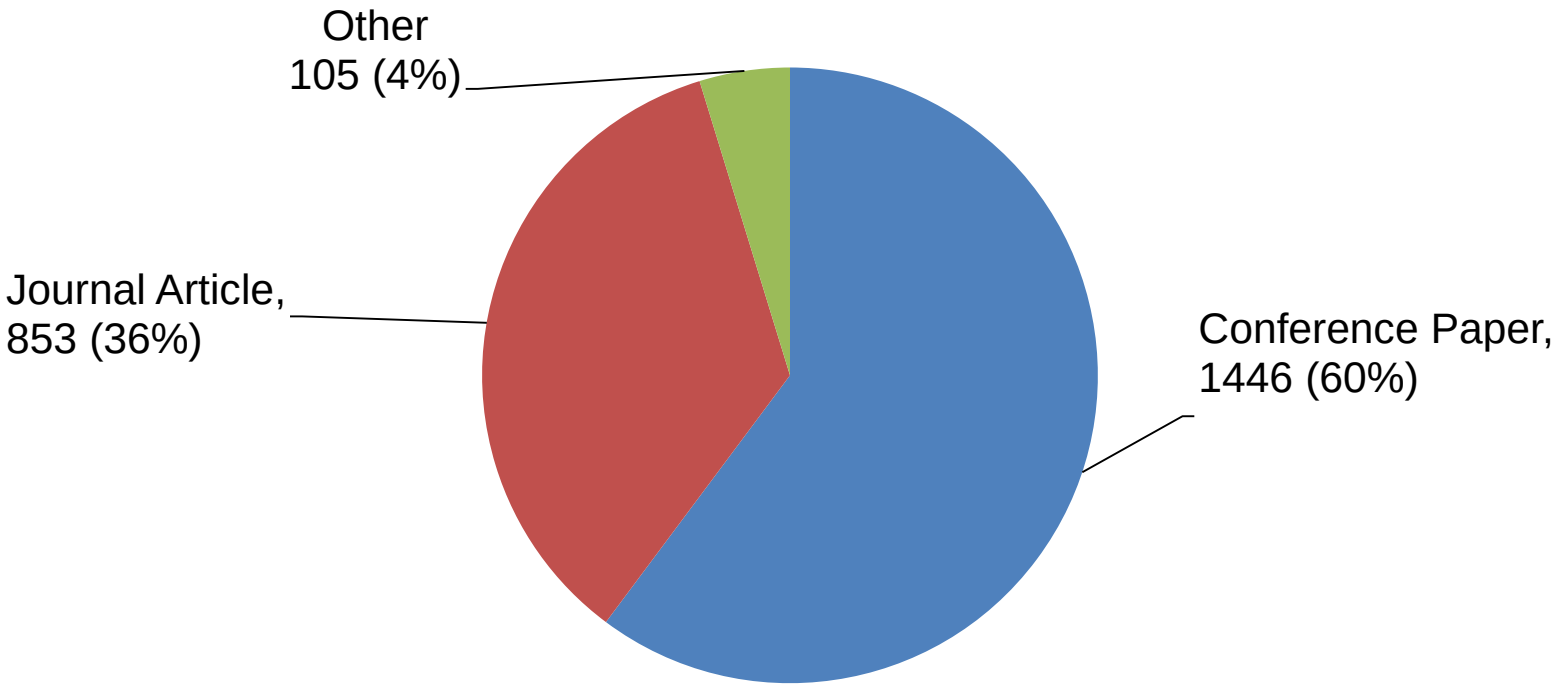
- 30 faculty members in computer science departments from 15 Canadian research universities were randomly selected
- Scopus database was searched to identify publications by each faculty
- Publication structures (i.e., No. of authors, No. of affiliations, page counts,, No. of references) were recorded/calculated.
- Citation indicators (times cited, *h-index*) were recorded
- Data collection was performed during January – April 2014

About the Sample

Institution	No. of Faculty Selected
Dalhousie University	4
laval University	1
McGill University	2
McMaster University	1
Queen's University	1
University of Alberta	1
University of British Columbia	4
University of Calgary	3
University of Montreal	4
University of Ottawa	3
University of Saskatchewan	3
University of Toronto	2
University of Western Ontario	1
Total	30

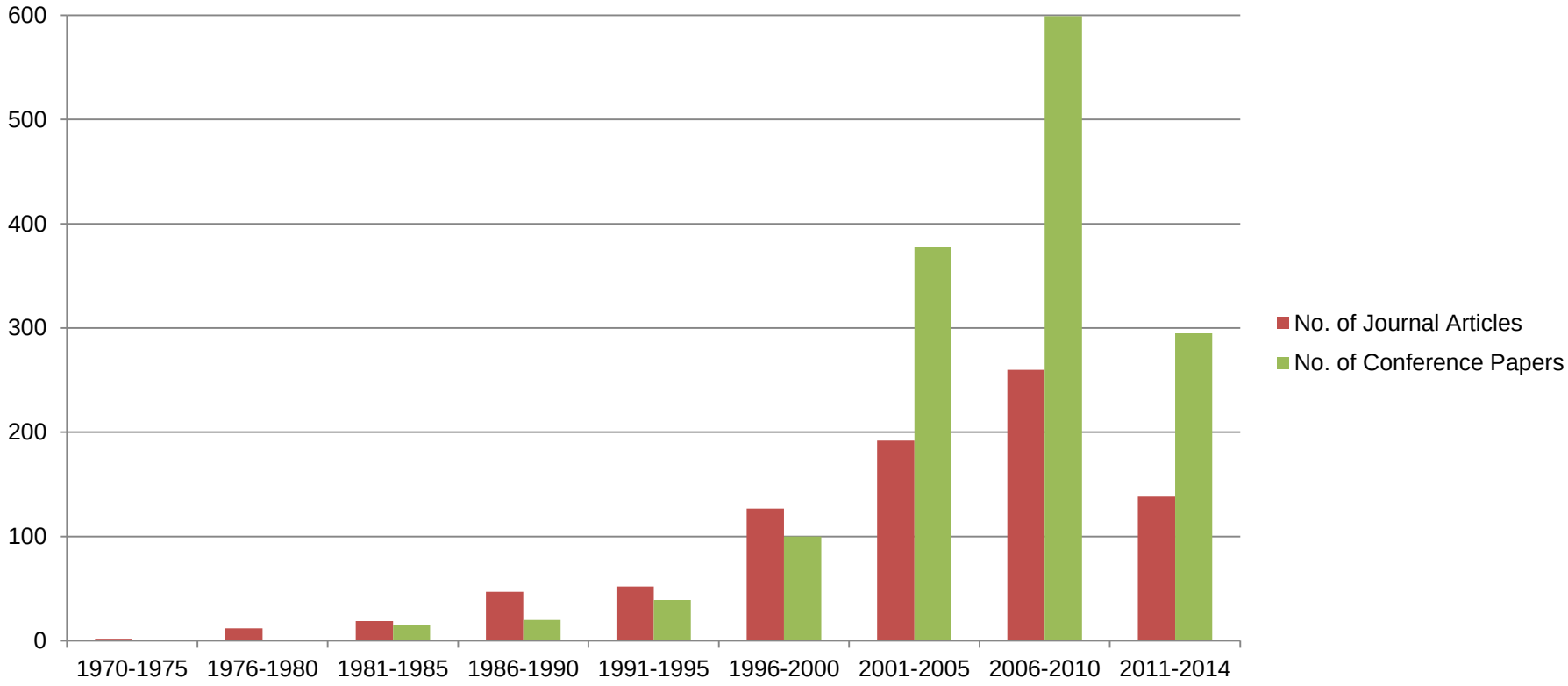
Position	Number
Assistant Professor	1
Associate Professor	8
Professor	18
N/A	3
Total	30

Publication Composition



Total Publications: 2404

Publication Trend



Comparison of Publication Structure

	Journal Article Average (SD)	Conference Paper Average (SD)
No. of authors/doc	3.13 (0.78)	3.12 (0.77)
No. of affiliations/doc	1.90 (0.48)	1.62 (0.43)
No.of pages/doc	15.25 (3.91)	9.21 (3.25)
No. of references/doc	26.24 (8.93)	19.70 (6.57)

Comparison of Citation Counts

	Journal Article	Conference Paper
Average Times Cited/Doc (SD)	14.38 (16.37)	4.66 (5.27)
Times Cited ≥ 50 (%)	54 (6.4%)	17(1.2%)
Times Cited ≥ 100 (%)	25 (2.9%)	8 (0.6%)
Times Cited = 0 (%)	175 (20.6%)	619 (42.8%)
Maximum Times Cited	507	754

Comparison of *h-index*

- Average *h-index*: 11
- *h-core*:
  - The set of papers that are included in the computation of the *h-index**
  - Can be viewed as the most influential works of an author

	Journal Article	Conference Paper
% documents in *h-core*	57%	38%
% citations to *h-core*	44%	51%

*Quentin L. Burrell. 2007. Journal of Informetrics. 1: 170-177

Implications

- Canadian computer scientists publish more in conference proceedings than in journals
- Computer scientists may consider publishing more in journals if they would like to achieve a higher impact
- Conference papers and journal articles contribute almost equally to the most influential works of a computer scientist

Implications cont'd

- Conference coverage should be one of the important factors to consider when developing collections for computer science
- Lower impact of conference papers might be due to the lesser dissemination and visibility of conference proceedings
- Improving the discoverability of conference papers in library systems is needed
- Information literacy programs to computer science and related fields need to include specific strategies to identify conference papers.

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Questions?

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